



Struvite from urine researched in field laboratory setting. Photo: EAWAG.

## Nepal: Pee proudly for healthy vegetables

There is one source of fertilizer that seems virtually recession proof and protective against soaring prices as well – and that is the fertilizer in human urine. The world recession has seen the price of chemical fertilizer fall by almost half in a few months, but this is against a background of soaring increases in prices up to December 2008 in some countries. In Nepal, fertilizer prices rose 300-500% in the months up to December 2008, the Environment and Public Health Organization (ENPHO) reported. ENPHO is using the price increase to argue that urine is one of the best and cheapest organic fertilizers around.

ENPHO has for several years been promoting ecosan toilets which collect urine and faeces separately. However, storing and transporting the product of urine diverting ecosan toilets is often difficult. Efforts are under way to crystallise the urine into a solid form so that it can be stored and used more easily – and the village of Siddhipur in Nepal is in the forefront of research. Siddhipur is a farmers' village about 10 km south-east of Kathmandu with a population of about 6,100, mainly engaged in subsistence farming. The village is also known for the production of Suku straw mats.

The Swiss Federal Institute of Aquatic Science and Technology (EAWAG/SANDEC), together with UN-HABITAT Nepal, is conducting research on the production of struvite from urine in Nepal. Struvite is a phosphate mineral first discovered in medieval sewer systems in Hamburg, Germany in the nineteenth century. It can be produced by adding a magnesium salt to urine, causing most of the phosphate and some

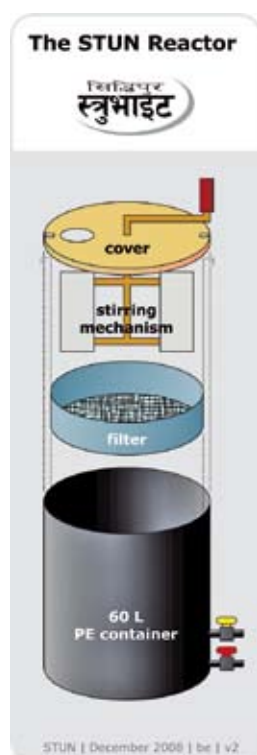
of the nitrogen to precipitate and form white crystals that can be filtered out. The research – known as STUN – seeks to optimise the reactor and assess the economics of Struvite production.

### Urine collected from households in Siddhipur

Human urine is collected from a dozen households in the village of Siddhipur. Then the "magic machine" (the struvite reactor), produces the powder through using a simple precipitation reaction, by adding magnesium and filtering out the solid with a cloth filter.

The project aims to adapt the pilot scale reactor, to obtain a low-cost, robust and simple method. Besides the precious yellow liquid, struvite production requires a magnesium source. But magnesium salts, such as magnesium sulphate, have to be imported from India. The research is now focusing on potential alternative magnesium sources, such as bittern (the waste product of sea salt production) or treated magnesite, a locally available mineral.

EAWAG and the Nepal agencies hope that in the near future powder production from urine will break new ground by being derived from public toilets in densely populated urban areas, where urine is generated in large quantities, and from rural communities, where transport to the field is difficult. Powdered extract of urine will facilitate nutrient recycling, transportation and storage, and will combine sanitation and sustainable soil management. Everybody will be able to make his or her contribution to healthy vegetables from the farm. Pee proudly.



Schematic overview STUN reactor (EAWAG)

Source: ENPHO E-Bulletin, November 2008, <http://www.enpho.org/e-bulletin-November08.html> and Bastian Etter, EAWAG, [bastian.etter@eawag.ch](mailto:bastian.etter@eawag.ch).

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With contributions from GWA



## Nepal: Innovative communication to promote household water treatment

The Environment and Public Health Organization (ENPHO) is one of several organisations actively promoting household water treatment in Nepal. UNICEF and the Department of Water Supply and Sanitation, with technical support from Business Advantage and ENPHO, produced a one-minute TV commercial on Point of Use (POU) Water Treatment. The commercial, which included actors Madan Krishna Shrestha and Hari Bansha Acharya, has been nominated as one of the finalists for the 5th Crity Award for



Hoarding board displaying PIYUSH use, Photo: ENPHO

Best TV commercial. The Crity Awards are presented by the Advertising Association of Nepal each year to recognize excellence in marketing. ENPHO invited people to help the POU advertisement win the prestigious award and thus promote POU water treatment through voting by sending an SMS text message.

A variety of promotional materials such as posters, brochures, pamphlets, stickers, health and hygiene bag kit, caps and monthly planners have been produced. These materials are being distributed through municipalities and partner organisations.

Innovative communication tools have been used to spread the word on safe water and to promote Piyush chlorine solution to treat water at home. A total of 20 scrolling display boards have been placed at schools, restaurants and other relevant places in Kathmandu and Lalitpur. 'Piyush' is sold to the public at subsidised rate as part of ENPHO's campaign to raise awareness

about household water treatment. ENPHO is conducting a baseline survey to see how much consumers know about POU options and how much they use them. This will question 1,000 households from Kathmandu Valley, Hetauda, Bharatpur, Butwal, Nepalgunj and Biratnagar.

ENPHO has been producing and marketing Piyush in Nepal since 1994 as a scientifically tested, affordable and convenient alternative to water treatment for safe drinking purposes.

The organisation is getting support for this 'use safe water' mass awareness campaign from the Academy for Educational Development (AED-NMark Nepal). Other advertisements are included on hoarding boards, and Piyush use is also promoted through radio jingles on various FM radio stations. ENPHO aims sell 300,000 Piyush bottles in the current financial year.

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## Matanza-Riachuelo: an environmental disaster born of negligence

The Matanza-Riachuelo river basin in the city and province of Buenos Aires (Argentina) qualifies as a real sanitary and environmental disaster. Not only is the water contaminated, but the air and soil are also polluted. Furthermore, the seven million people who live in this 2000 km<sup>2</sup> area have a very low standard of living in the country, with two million living below the poverty line.

The river basin's condition is shameful: 35% of people lack fresh drinking water, 55% do not have a sewerage system, and there are more than 100 illegal open air garbage dumps. The Neighbourhood Association of La Boca (AVB in Spanish) says this is the only ecological catastrophe in the world that has lasted for more than two decades, while the State did absolutely nothing to avoid it.

### *Ironically they say they are not polluting the area*

More than 3 000 industrial units are located in an area of 64 kilometres reaching from Cañuelas to Boca, of which just 65 are responsible for 80% of the industrial contamination. Chemical, pharmaceutical and petrochemical units are responsible for almost a third of this 80% being dumped in the river; the meat and dairy industry cause 21%, food and non- alcoholic beverage industries 14%, paper mill and textiles 11%, metallurgic 7% and animal skins 3%.

All these industries claim that they are not exceeding the legal limits. However, studies done by the Japan International Cooperation Agency (JICA) in Argentina have found that children in the region have five times the standard norm for chrome and lead levels in their bodies. Child mortality is twice as high as in the rest of the Buenos Aires province.

About 4,500 of the residents live in a part of the river valley that has become known as Villa Inflamable, close by a major Shell refinery and other petro-chemical plants. It got its name because if you drop a match, the ground is said to ignite! A study by the Avellaneda municipality and the national government found that 50 % of the children there had lead in their blood, while many had also chrome, toluene and benzene in their urine.

Armando Tisera, from the La Boca neighbourhood on the banks of the Riachuelo River said, "Every river is a source of life but this river is a synonym for death. Governments have come and gone, but the Riachuelo waters continue to be black and dirty."

Setting up sanitation systems in these conditions is more than just a technical problem. Bad faith and inefficiency by various politicians have hindered many initiatives aimed at improving conditions

in Matanza-Riachuelo. Instead of applying common sense, they put their personal interests and profits first and let the region suffer.

Even when there are sincere political intentions, adequate funding will be essential, and an effective territorial agreement must be signed. To allow this hydrological system to recover it is imperative to prevent further contamination. This means running a solid awareness campaign so their people understand their own role in the use and enjoyment of this quality resource. Information, awareness and education networks must be formed to carry this out.

### *Supreme Court ruling*

In 2006, the Supreme Court made a ruling in a case brought by local people, ordering the State, the Buenos Aires province, and the City to prevent and repair environmental damage to the river basin. The ruling also covered responsibility for planning and implementing sanitation in the area. It was recommended that responsibility for monitoring sanitation plans should be carried by a collegiate body comprising state actors, foundations and citizens, which would also encourage citizen participation and control. This consists of the the national Ombudsman as well as NGOs such as the Environment and

Natural Resources Foundation (FARN), the Centre for Legal and Social Studies (CELS), Greenpeace and the Neighbour Association of La Boca (AVB).

Since the ruling, a number of factories have been closed, although it appears that little of the international money pledged to clean up the river basin has been used for that purpose. However, the Supreme Court ruling is an opportunity to meet commitments and to implement a state environmental policy that offers concrete answers.

## Water moves sharply up the political agenda

There can be no doubt that water is moving up the political agenda. After President Barack Obama used part of his inauguration speech to highlight the importance of water in poverty reduction, the World Economic Forum took a break from the global financial crisis to stress its concern over water resources.

First Obama, who affirmed the USA's commitment to help the developing world, said: "To the people of poor nations, we pledge to work alongside you to make your farms flourish and let clean waters flow; to nourish starved bodies and feed hungry minds. And to those nations like ours that enjoy relative plenty, we say we can no longer afford indifference to suffering outside our borders; nor can we consume the world's resources without regard to effect. For the world has changed, and we must change with it."

That was 20 January 2009. Nine days later at Davos Klosters in Switzerland the World Economic Forum described water as the nexus linking together a web of food, energy, climate, economic growth and human security.

A report *The Bubble is Close to Bursting* warned, "Worsening water security will soon tear into various parts of the global economic system. It will start to emerge as a headline geopolitical issue. The volatility in food prices in 2008 should be treated as an early warning sign of what is to come."

"In many places around the world, we have consistently under-priced water,

This Matanza-Riachuelo case can be seen as a turning point for the Gran Buenos Aires region, and as an opportunity for greater awareness for urban, economic, industrial and ecological development and above all social development. Water is a social asset, and access to safe, clean water is a fundamental human right.

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*Both authors are member of the environmental team of the civic coalition.*

More pictures and maps: <http://acumar.gov.ar>



wasting and overusing it as a result. We have depleted stocks of groundwater at the expense of our future water needs. In effect, we have enjoyed a series of regional water "bubbles" to support economic growth over the past 50 years or so, especially in agriculture. We are now on the verge of water bankruptcy in many places with no way of paying the debt back."

Some of the highlights of the forecast include:

- By 2025, water scarcity could affect annual global crop yield to the equivalent of losing the entire grain crops of India and the US combined (30% of global cereal consumption). Yet, food demand is expected to grow 70-90% by 2050.
- Energy production accounts for about 39% of all water withdrawals in the US and 31% of water withdrawals in the EU. The competition for access to water between energy and other sectors will intensify over the next two decades.
- The glaciers of the Himalayas and Tibet alone feed seven of the world's greatest rivers, providing water to more than 2 billion people. These glacial banks are disappearing at an accelerating rate. Most analyses suggest the majority of them will disappear by 2100 under current trends. Further, 70 major rivers around the world are close to being totally drained in order to supply water for irrigation systems and reservoirs.
- Within two decades, water will become a mainstream theme for investors; for many, water is already a better

"pick" than oil. With good regulation, this will enable much more financing to be mobilized to invest in water infrastructure and technology. With poor regulation, innovative investment funds in water could expand.

UN Secretary General Ban Ki-moon commented: "The water problem is broad and systemic. Our work to deal with it must be so as well. The World Economic Forum's effort to develop the economic and geopolitical forecast on water is essential. For the first time, all the different perspectives and expertise required to define the full dimension of the problem and propose solutions are brought together."

Dominic Waughray, Senior Director and Head of Environmental Initiatives of the World Economic Forum, and lead author of the report said that the economic downturn offered an opportunity to start addressing the water crisis. "Management of future water needs stands out as an urgent, tangible and fully resolvable issue for multiple stakeholders to engage in."

The Report from the World Economic Forum Water Initiative is called *The Bubble Is Close to Bursting: A Forecast of the Main Economic and Geopolitical Water Issues Likely to Arise in the World during the Next Two Decades*. It is available online at [http://www.weforum.org/documents/gov/gov09/envir/Water\\_Initiative\\_Future\\_Water\\_Needs.pdf](http://www.weforum.org/documents/gov/gov09/envir/Water_Initiative_Future_Water_Needs.pdf).

## African reporters to produce short water films using mobile phones

AKVO is a combination of Wikipedia, eBay and YouTube for water and sanitation projects, aiming to create and share internet tools that help to provide clean water and proper sanitation. AKVO has launched a Simple Video Reporting product, jointly with Africa Interactive. Using this a team of African reporters are able to produce short films using mobile phones, and share them using YouTube and other internet video channels. This is a new product offered to all AKVO partners with a set tariff designed to make it easy to commission films. The films help projects secure funds for AKVO projects, and generate a virtuous feedback loop, which encourages more funding of projects and increases the transparency of reporting. Films will be put online on the new AKVO Partner movie channel that has just been started, see <http://vimeo.com/2621792>.

## National policies and strategies: WASH coalitions in action

WSSCC-supported National WASH Coalitions operate in 33 countries. An increasingly prominent component of the coalitions' work is cooperation with governments to develop national policy documents. Through dialogue and review, they contribute to relevance and transparency, as well as stakeholder buy-in. Hereunder are three country experiences.

### Nigeria

Nigeria is Africa's most populous country and 50% of the population lack access to safe water and adequate sanitation. The country is developing a National Economic Empowerment Development Strategy (NEEDS) and the draft was reviewed by the national WASH Coalition, the National Task Group on Sanitation (NTGS). The coalition identified several weaknesses in sanitation plans and budgets, such as a lack of sanitation strategies, evidence-based costs for sanitation delivery, and mechanisms for inter-sector cooperation.

NTGS's credibility comes in part from its composition, which includes ministries and civil society and development actors in sanitation. It is able to harmonise sanitation policies and make standards and methodologies consistent. Coalitions are uniquely suited for policy processes and strategy development, since all participating organisations are heard. Further, the different ministries in NTGS have a platform to negotiate overlapping responsibilities and agree joint positions without losing face.

However, negotiations are problematic by nature. Extensive discussions are required, and the lack of resources for most stakeholders is compounded by the lengthy process, sometimes dragging on for years. Once approved, implementation is hampered by bureaucracy and limited

government budgets. Nigeria's experience shows that while government participation in the coalition is vital and adds credibility, civil society members must be ready with advocacy and campaign efforts of their own - and government actors must be open to constructive criticism.

### Philippines

Access to basic WASH services in the Philippines is relatively good, but access is unevenly spread. Political instability has hindered development of the sector, which lacks clear guidelines and action plans.

In 2008, a Water and Sanitation Sector Road Map was drafted by government actors in close collaboration with the Philippines WASH Coalition. The Road Map elaboration involved the Coalition in meetings, reviews and debates in which it presented research and case studies to highlight a people-centred approach. Initially, Coalition members, many representing civil society organisations, were disappointed to be outnumbered by government representatives and found it difficult to influence the debate. However, they paved the way for stakeholder participation, which was clearly increased in later processes involving adjacent sectors, such as elaborating national WASH emergency guidelines under the Department of Health, and a National Action Plan on Wetlands.

The Coalition's greatest achievement has been the gradual institutionalisation of civil society involvement in political decision making. Contacts established through the national WASH Coalition built trust among members, strengthened by informal communication links, knowledge sharing, and the Coalitions' connection to national and international actors such as WSSCC and WHO.

### Madagascar

The National Diorano-WASH committee has been key in increasing public and political attention for WASH issues. The coalition, which is located within the newly established Ministry of Water, has helped to elaborate a National Programme of Access to Potable Water and Sanitation. It has also, among other successes, participated in the annual 'presidential dialogue' to evaluate implementation of the national Madagascar Action Plan for achieving the MDG water and sanitation targets.

Coalition members wrote parts of the document and facilitated stakeholder discussions and individual meetings with high-level ministerial staff. WASH coalition involvement improved sector and inter-sector coordination, helped to avoid conflict and duplication, and increased transparency. All relevant public and private national and local level organisations involved in the WASH sector are members of the coalition, providing nationwide legitimacy. The WASH coalition's participation in such discussions is a big step towards participatory policy dialogue.

These brief examples show that the engagement of WASH Coalitions in policy development can avoid overlaps in responsibility, highlight different opinions, and pave the way for improved sector and inter-sector coordination. Yet, a common lesson is that these processes are not to be hurried. Building trust to facilitate the dialogue with civil society and government agencies is a time consuming, but rewarding process contributing to the harmonising of resources and efforts for increasing access to WASH services for all.

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## First Global Handwashing Day is a big success

'A handwashing day? This world is full of surprises!' said one Burkina Faso elder when he heard about the Global Handwashing Day (GHD) celebrations in his country.

In over 70 countries around the world on 15 October 2008, thousands of people in schools, public places and at official events

washed their hands with soap in order to raise awareness of this life-saving practice that can cut child diarrhoeal deaths by over 40 percent.

The elder's reaction was not perhaps surprising. According to a survey conducted in eight districts in Burkina Faso, fewer than 10% of people wash their hands with



*Photo: Diorano-WASH, Madagascar.*

soap before eating and after going to the toilet. In east-central Burkina Faso, GHWD celebrations drew regional and national authorities who pushed the handwashing message.

In Ethiopia, a key target audience was school children. The Ethiopian GHWD celebrations resulted from collaboration between UNICEF, the Ethiopian WASH Movement and private sector partners.

Publicity materials and radio and video public announcements were produced with input from the Speak Africa Youth Initiative, which gives children a voice to promote sanitation and hygiene practices.

In Madagascar, Health, National Education and Water ministers lined up to wash their hands with soap at the Antanimena public school, encouraging around 13,000 children participating in celebrations nationwide to

adopt this effective and inexpensive way to prevent diarrhoeal disease and pneumonia.

GHWD is an initiative of the Public Private Partnership for Handwashing.

For more information on GHWD celebrations in Burkina Faso, Ethiopia and Madagascar contact WSSCC National Coordinators for these three countries: Mr. Yéréfollo Malle, [malle@fasonet.bf](mailto:malle@fasonet.bf); Mr. Michael Negash, [mchlgeh@yahoo.com](mailto:mchlgeh@yahoo.com); and Mr. Jean Herivelo Rakotondrainibe, [herivelo2@blueline.mg](mailto:herivelo2@blueline.mg).

## Civil society makes its mark at SACOSAN III

The voice of civil society was heard at the South Asia Conference on Sanitation (SACOSAN) 2008 in Delhi, after WSSCC, FAN South Asia and WaterAid co-hosted a pre-meeting for community-based and civil society organisations. These grassroots NGOs produced a Civil Society Declaration that provided formal input into the conference deliberations and final declaration. The declaration called for:

- improved monitoring of health impacts to improve the effectiveness of sanitation programmes and to convince policy makers of the need to invest;
- sanitation programmes focusing particularly on the urban poor;
- improved sanitation facilities to ensure 100% girls enrolment in schools;
- improved sector capacity to ensure the best use of resources.

One moving highlight was the silent candlelight vigil dedicated to all who have died in the region from diarrhoea, the leading cause of child deaths in South Asia.

Their advocacy paid off, as South Asian governments recognised sanitation as a basic right and the official SACOSAN declaration addressed the civil society themes. It was a historic moment. Now comes the immense task of translating commitments into action.

For more information on SACOSAN III and the civil society pre-meeting contact Ms. Carolien van der Voorden, WSSCC Programme Officer Networking and Knowledge Management, [vandervoordenc@who.int](mailto:vandervoordenc@who.int).

Photo: FAN South Asia.



## News from WSSCC

The International Year of Sanitation (IYS) 2008 was a big success. Throughout the year, WSSCC promoted five important messages, that basic sanitation:

- improves health,
- fosters economic development,
- promotes social development,
- protects the environment and
- is universally achievable.

### WSSCC Takes Sanitation to New Audiences at Clinton, UBS Meetings

IYS was a springboard to reach out to new audiences about sanitation and hygiene. Two events epitomised this effort in September 2008 --the UBS Global Philanthropy Forum and the Clinton Global Initiative Annual Meeting.

General estimates put private investments and philanthropy worldwide at \$209 billion [Euro 166 billion] in 2006, while ODA from 22 countries contributed another \$106 billion [Euro 84.2 billion].

At the UBS event in Singapore, WSSCC Executive Director Jon Lane spoke about the importance of sanitation and, with the World Toilet Organization, hosted a side event in - appropriately - a hotel restroom. Mr. Lane had three messages to the gathered philanthropists, most of whom had never considered the sanitation gap.

- Back the people and organisations pioneering new approaches, like market-led sanitation.
- Use your entrepreneurial skills to push creative ideas forward.

- Use your contacts and reputation to persuade other people about the importance of sanitation.

WSSCC also took sanitation messages to the Clinton meeting in New York to make CGI members aware of the issue and encourage them to take action. WSSCC made a commitment to raise an additional \$30 million for the Global Sanitation Fund as part of a broader 'Water and Sanitation Mega-Commitment' totalling some \$60 million.

For more information, contact Mr. David Trouba, WSSCC Programme Officer Communications, [troubad@who.int](mailto:troubad@who.int).

## WASHCost visits commune to learn about costs and quality

The commune of Poa, 60 kilometres from Ouagadougou, Burkina Faso, is made up of six villages which are home to approximately 30 000 people. In November 2008, the 22 members of the WASHCost project visited the commune to get a grounding in local realities before starting an Impact Assessment workshop in Ouagadougou.

WASHCost is a five year project to research the life-cycle costs of water, sanitation and hygiene (WASH) services in rural and peri-urban areas in four countries. One of the aims of WASHCost is to bring reality into cost estimates so that they reflect the real costs of service delivery – and so it is important to understand local context and challenges.

After a meeting with the village authorities, WASHCost participants split into three field groups to look at different aspects of water and sanitation provision and decision taking.

### *Group 1: Families in central Poa*

The first group went to meet two families and to see a water pump that served an area of central Poa.

Both families owned Ecosan latrines as well as a more traditional pit latrine. The first family explained the Ecosan latrine brought prestige and they found it to be efficient and cost effective. The family lives close to the public meeting hall and people gathering there often use the family latrines, which means that they now want a third one! The second family liked the cost savings they made on fertiliser, the reduction in smell and the fact that it is

easier to clean out sludge from the toilet than with a traditional latrine. This family too is considering building a second one.

The group visited a water point constructed with funds from the government and managed by an elected committee that includes the Major, the head of the school and community members who live nearby. The committee is responsible for collecting fees and for maintaining the point. To fund larger operation and maintenance task, the committee has to go door to door to collect funds. For one large breakdown, it took them 15 days to collect the money.

### *Group 2: A more remote area of the commune*

The second group also visited a family with an Ecosan toilet in a more remote area. The owner/caretaker said that by producing his own fertilizer, he cut down on costs and simultaneously increased crop production. The caretaker was so enthusiastic about his Ecosan toilet that he is planning to build another, at a cost of 75 000 CFA or 114 Euro, to be paid in cash and kind. The toilet is used by all 20 members of his extended family. It has two chambers, each of which takes, 4-6 months to fill up.

The group visited a borehole with a foot pump (see picture) that serves 700 people. The pump has been in use for more than 12 years and has broken twice, with repair costs of 75 000 CFA/ 114 Euro and 35 000 CFA/ 53 Euro. Community members pay 100 CFA or 0.15 Euro a month per adult to use the borehole which has to cover running costs and repairs. The water committee received training from the government when the pump was installed 12 years ago, but currently receives no assistance.

The local primary school, gives hygiene awareness classes to the children, but the head teacher explained that there was no water in the school so students had to walk several hundred meters and use water from a well to wash their hands after visiting the toilet at the school.

### *Meeting with women in the community*

The third group conducted a discussion with about 20 women involved in cereal and brewing alcoholic drink.

Almost all of the women had a latrine at home. The cost varies from 20 000 – 60 000 CFA (30 – 91 Euro), depending on soil conditions, with lower costs on dry or rocky land. They said that sanitation had improved with the arrival of Ecosan latrines.

Women are usually responsible for collecting water in Poa and it takes about two hours a visit, as they have to wait in a queue. The community does have some wells but they empty in the dry season and the water is not as good as from the pumps. Half the members of the local committee in charge of communicating with the water board committee are women.

### *Lessons learnt by the groups*

After a closing ceremony organised by the commune authorities, the WASHCost team (from Ghana, Mozambique, India and the Netherlands, as well as Burkina) swapped notes about what they had seen.

They were impressed with the quality of the latrines. One had been told “not to look at the cost but to look at the benefit”. However, they felt that they needed to be able to ‘triangulate’ what they were told about costs so that they could use the figures with confidence.

The main objective of the Impact Assessment Workshop was to come up with an agreed plan for assessing the impacts of the WASHCost project. The workshop was technically facilitated by the UK-based Overseas Development Institute (ODI) and organised by CREPA.

*Adapted from a narrative report of the impact assessment workshop prepared for WASHCost by Michele Adjei-Fah, Maria Chuma, Pascal Dabou and Jeske Verhoeven.*



Borehole with a foot pump, visited by Group 2.

## Uganda: IRC and local partners start improved WASH governance project in West Nile

IRC and two local partners have started a project to strengthen WASH governance in the West Nile sub-region of Uganda, by strengthening and supporting dialogue between elected leaders and technical staff, NGOs, CBOs and businesses in the water, sanitation and hygiene (WASH) sector. Its main objective is to help to create accountable and responsive WASH services for rural communities in Moyo, Adjumani and Nebbi districts and in Amuru sub-county.

### *Main implementing partners*

Three partners are working together, using European funding (EuropeAid/126-522/M/ACT/UG). Ceford, an experienced local NGO based in Arua Town and with field offices in Adjumani, Nebbi and Moyo, will work on capacity development with local government and NGOs, ensuring follow-up between

learning sessions. NETWAS will function at national level, responsible for knowledge management and documentation, amongst other things. The project will be fully documented to make it easier to scale up successful approaches. IRC brings its experience in decentralised learning from other African countries.

The 22-month, 250,000 Euro project will bring service users, providers and planners together in learning platforms that facilitate and encourage them to exchange experience about WASH services and learn together to harmonise, coordinate, implement and scale up local actions.

This will significantly contribute to provision of effective, affordable, equitable and sustainable services that are responsive to community demands, and especially to the poorest and most vulnerable groups. The various

stakeholders will collaborate on action research to test out practical solutions for improved service delivery. They will share good practice and test it out in this local context, including ideas developed in other projects outside the targeted districts and sub-counties.

Successful approaches and best practices developed in this project will potentially be used for scaling up services in other districts and at national level.

This is not a stand-alone project. It will link into the decentralisation framework in the country, specifically with existing decentralised platforms for planning and policy-making for water and sanitation. This will help to strengthen feedback mechanisms to national institutions and platforms, eventually influencing WASH sector policies and guidelines.

## Putting multiple uses of water into practice

The multiple-use services (MUS) approach has emerged over the last decade as an alternative approach to providing water services. It stems from a recognition that people use water for multiple purposes, even if the services were originally planned for a single use. Today, the MUS approach aims to move from merely recognising this to explicitly providing water services that are designed to meet people's multiple water needs.

A growing number of organisations have been undertaking activities on multiple-use services, ranging from conceptual and empirical research to piloting multiple-use services delivery and policy advocacy. They have come together in the Multiple Use Services (MUS) Group, (originally established in 2003 as PRODWAT), to undertake research and documentation, promote implementation and learning, and facilitate information sharing and evidence-based advocacy on multiple-use services.

The MUS Group, together with the RiPPLE (Research-inspired Policy and Practice Learning in Ethiopia and the Nile Region) organised an international symposium

on multiple-use services from 4 to 6 November 2008 in Addis Ababa. The aim of the symposium was to:

1. take a critical look at findings from research and practice on multiple-use services provision, and
2. to discuss implications for taking the MUS approach forward, leading to strong policy recommendations.

### *MUS costs less*

A number of case studies presented at the symposium highlighted the benefits of MUS, including improved health, increased production, and additional income generation. A cost-benefit global study, led by Winrock International, showed that the additional benefits of multiple-use services often outweigh the additional costs.

The cost-benefit ratio becomes even more positive, considering that MUS allows economies of scale and efficiency in investment. Participants argued that investments in multiple-use services cost less than investments in separate domestic and irrigation systems. This point was highlighted in the opening by Mr Abera

Mekonnen, adviser to His Excellency Ato Asfaw Dingamo, the Minister of Water Resources of Ethiopia:

"Access to water for basic domestic uses alone is not sufficient. People also require access to water for small-scale productive uses. (...) Investing in access to water for domestic uses and for production at the same time has many advantages among which:

- Greater synergies in investments and economies of scale can be obtained by developing services which provide for these needs at the same time.
- A much greater impact on poverty can be achieved, as the benefits obtained from domestic and productive uses are mutually reinforcing, and allow greater impact on people's health, income and food-security status".

### *Putting MUS into practice*

The symposium also showed the variety of ways in which multiple-use services can be provided:

- Household options, often through self-supply. Examples included rainwater harvesting in Thailand, rope pumps to increase water lifting and productive

use of water at homestead level, and point-of-use treatment options. Return on investments in such options is often very high.

- Developing new communal systems for MUS. Examples include piped communal systems, as in Nepal, and small community reservoirs in Sri Lanka and Ghana.
- Addressing multiple-uses in existing domestic and irrigation systems. A case from Honduras showed that many existing water supply systems can physically accommodate water for small-scale productive, once internal regulations are adjusted. A study by FAO

discussed how multiple uses of water were considered in large-scale irrigation schemes as part of a move towards service-oriented management.

### Way forward

Specific follow-up activities were discussed for the global level, as well as for some specific countries. In Nepal, for example, an MUS working group will be established at national level as a continuation of the learning alliance established under the Project. Policy recommendations were formulated to be presented at the 5th World Water Forum.

As a MUS community, we are coming to a much better shared understanding of what MUS is, what it isn't, and what it can achieve. Above all, there is a good understanding on how to provide MUS.

The Group can move from advocating for MUS, to advocacy about how to do MUS. Or, to conclude it in a popular phrase during the week of the symposium: "MUS; yes we can!"

*Stef Smits, IRC.*

## Water and land media workshop achieves immediate follow-up action in Arab region

Egypt's Ministry of Water Resources and Irrigation will organize a second capacity development workshop with journalists from all the Nile basin countries. Together with other Arab and UN organizations it will also facilitate the setting up of a platform connecting the various networks of journalists who work on water, land, environment, health and food in the region. These were the main outcomes of the first Capacity Development Workshop for Water and Environmental Journalists in the Arab Countries on the important topic of Water & Land in Egypt from 22-24 January 2009.

"Networking of media for improving water management in the Arab world is an important outcome of this workshop. Media play an important role in educating children as well as the politicians. Together we should invest and prepare the people, without that water and irrigation technologies will not work. I am glad to see your enthusiasm to move ahead. This is a good start for a better future. When you return to your countries you are our

ambassadors for the Arab water world", Deputy Minister Hussein I. El-Atfy told the journalists at the handing over of the workshop certificates.

More than 20 journalists from seven countries in the Arab region actively shared their views and contributed to the programme. They also recommended a range of follow up actions for various agencies in this region which is the most water scarce in the world. The meeting was co-organized by the UN-Water Decade Programme on Capacity Development (UNW-DPC), the United Nations Convention to Combat Desertification (UNCCD) and the Arab Water Council (AWC). The International Development Research Centre (IDRC), Middle East/North Africa Regional Office and Desert Research Centre also provided support to the workshop. Five international instructors facilitated the outcomes of the workshop. IRC's Dick de Jong helped design the programme and contributed three sessions.

Media people from seven countries participated in this three-day workshop at the Regional Training Centre hosted at the Ministry of Water Resources and Irrigation, in 6 October City, Cairo, Egypt. They were from Algeria, Egypt, Jordan, Lebanon, Morocco, Sudan and Yemen and coming from different media: radio (2), television channels (1), internet based institutes (1), national news agencies (2), newspapers (8), magazines (3), journalists networks (4) and communication staff from governmental institutions (2).

### Media have an important role to play

The media have an important role to play in educating the public, in advocacy and

in providing guidance on the need to conserve water and avoiding further land degradation. All players in these sectors should learn more about what journalists do. Articles on water are everywhere, on TV, in newspapers and blogs.

The main objective of the workshop was to create awareness among media professionals in Arab countries regarding the current situation on water resources management and land degradation in the region, and to seek active involvement of the media for creating public awareness and advocacy to promote sectoral reforms to support the Millennium Development Goals and the Convention to Combat Desertification. The expectation is that with increased media attention to these issues, there will be more public awareness, which in turn, will draw more intensified attention from decision-makers.

*"Thank you for the knowledge we required and the brainstorming. We benefitted much from this workshop and learned creative approaches. You achieved your ultimate objective. Many new issues were presented to us, and the importance of linking media, scientific people and policy and decision makers to work together for the wellbeing of the people".*

*Essam Al Din Abd Al, Al Gomhoria Daily Newspaper, during the closing session.*

### Recommendations from the workshop

Recommendations from the workshop include:

- Preparation of a specific website on land and water in Arabic and English where information/articles from the journalists could be posted, as well as a database



*Dr. Hassan Hendy, member of the Desert Research Centre explains to journalists good and bad agricultural and water management practices along the Cairo-Alexandria Desert Road, Photo: UNCCD/Marcos Montoiro*

on progress on the global checklist that the media could use to evaluate efforts of their governments to meet the water, sanitation and land challenges. This could form the basis for an increased dialogue with all the stakeholders in the region.

- Establishment, development and management of alternatives ways of sharing information and articles prepared on land and water such as blogs and other kinds of social networks and electronic fora.
- Follow up should be handed over to the region; it is proposed that the Arab Water Academy set up a capacity building programme for Water, Environment, and Health journalists. The Arab Water Council will discuss this issue in its next board meeting. This will include establishing an active media network in the region.

It was also recommended to link these activities with the existing networks such as the Arab Association of Science Journalists in order to avoid duplication, and the group should be expanded.

## Improving wastewater agriculture by learning together

As part of the Wastewater Agriculture and Sanitation for Poverty Alleviation (WASPA) project in Asia, IRC helped to facilitate four one-day sanitation and hygiene training sessions for 100 wastewater farmers in Rajshahi, Bangladesh. The farmers welcomed this opportunity to learn more about safety issues like the importance of handwashing, washing vegetables in clean water and safe sanitation. Local "learning and sharing teams" are working with government stakeholders to provide guidance on fertilizer use for safer production and better crop yields.

The importance of wastewater reuse in urban and peri-urban agriculture has to be recognised and clear policy guidelines set to prevent negative impacts on human health and the environment. This involves stimulating research, knowledge sharing and awareness raising and encouraging a variety of stakeholders to take up their responsibilities.

Targeted training sessions and informal meetings are organised to increase knowledge about safe reuse and to support behaviour change. In Wilgoda, in Kurunegala city in Sri Lanka, women formed informal discussion groups where they were able to identify common hygiene problems. The major complaint was the

UNCCD announced that it is organizing a number of training sessions for journalists leading up to Desertification Day on 17 June around the theme "Conserving land and water = securing our common future".

Working in three groups (Egypt, other countries in the region and the French journalists from Algeria and Morocco) the participants developed a list of media activities they will undertake with new knowledge and information from this workshop relating to water and land events in the coming year. The first one is around World Water Day on 22 March, the second is around Desertification Day on 17 June.

### Field trip

On the last day the participants visited the Cairo-Alexandria Desert Road where contrasts of agricultural practice and water management was observed. Dr. Hassan Hendy, member of the Desert Research Center, explained to the journalists:

"In this area we can see examples of different agricultural practices with different consequences.



Good example: grape farm with drip irrigation. Photo: IRC, Dick de Jong

There are banana plantations that bring good income in short time but cause land degradation, soil salinisation and exhaustion of the underground water. By contrast you also see here olive and date palm plantations that support the sustainable development in the newly reclaimed areas."

lack of latrines and drainage, as there is no sewage system.

Since the start of 2005, a wide range of data has been collected within the WASPA project to develop a shared understanding of waste water farming and sanitation and to identify problems and areas for action. Studies are under way to find cleaner methods of production and affordable solutions for reducing waste and managing wastewater. Joint visions and action plans to improve sanitation and wastewater management, and to mitigate health and environmental risks have been developed and fine-tuned, based on feedback and a joint assessment with stakeholder groups.

### Documenting stories from the field

The programme included pilot studies in selected communities in Bangladesh and Sri Lanka between 2005 and December 2008. A learning alliances approach provided a platform for stakeholders to come together for sharing and learning, the first opportunity for farmers and the municipal commissioner to sit together, discuss problems and develop collaborative action plans. The project teams managed to raise stakeholder awareness and are slowly gaining commitment from stakeholders to act around WASPA issues. This is a slow

process involving informal visits, phone calls and meetings to build trust and commitment and to clarify responsibilities and objectives: "We needed to learn who the relevant stakeholders were and build relationships with them. Explaining and understanding the Learning Alliance concept also takes time. This is not a familiar way of working in Bangladesh", said one participant.

Teams have also been documenting changes in stakeholder awareness and understanding as well as challenges the teams have faced and lessons learned from learning in a multi-stakeholder forum. In Bangladesh, the WASPA team has been writing 'change stories' to help stakeholders to reflect on the project approach and the



WASPA staff member talking to woman.

stories behind its successes and difficulties. As part of the CGIAR Knowledge Sharing in Research Project, the project team in Sri Lanka and a range of stakeholders were interviewed about their perspectives. These stories, interviews and group reflections are part of documenting the process to reach a better understanding about why and how a project follows a particular course and experiences its successes and failures.

For further information about the WASPA project, visit: <http://www.iwmi.cgiar.org/waspa/WASPAprojinfo.htm>

For information about the Knowledge Sharing in Research Project, visit the website-- [www.ks-cgiar.org](http://www.ks-cgiar.org)

## Eldis uses IRC information sources on its site

*Conflict mediation in the water and sanitation sector: and how to reach solutions*, by J.T. Visscher; published by IRC International Water and Sanitation Centre, 2008 is the most recent of our titles being flagged on the Eldis web site.

Water scarcity is just one problem that may lead to conflicts. Others include conflicts over water quality or privatisation of water supply services. This paper explores current thinking about conflict management in the water and sanitation sector and is written for individuals who want to understand more about the way to analyse, understand and help to manage conflicts. It reviews different options for conflict management, putting special emphasis on mediation to encourage dialogue and shared action to resolve many water supply and sanitation conflicts.

## Six IRC titles selected in peer review on decision-making support tools

Six IRC books have been selected by international authors in their wider selection of 120 existing support resources to assist decision-making support tools for WASH practitioners. Meena Palaniappan, Micah Lang, and Peter H. Gleick of the USA-based Pacific Institute did this in their Review of Decision-Making Support Tools in the Water, Sanitation, and Hygiene Sector, Spring 2008.

It is interesting to see that the authors included in their selection for this work IRC titles from 1991: *Just Stir Gently: The Way to Mix Hygiene Education with Water Supply and Sanitation* (TP 29-E); and 1994: *Together for Water and Sanitation: Tools to Apply a Gender Approach. The Asian Experience* (OP 24-E).

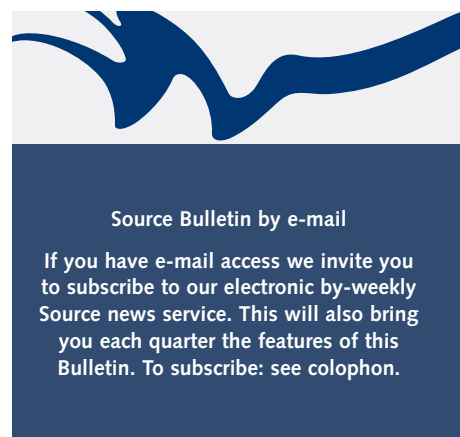
The project also has a blog which contains updates on activities, events and outputs and also poses interesting questions and initiates relevant discussions. It can be accessed via- <http://ictkm.wordpress.com/category/knowledge-sharing/>

Wastewater Agriculture and Sanitation for Poverty Alleviation in Asia (WASPA Asia) Project, was funded by the European Commission under its Asia Pro Eco II Programme undertaken by a consortium of partners including IWMI, IRC, SEI, NGO Forum (Bangladesh) and COSI Foundation (Sri Lanka).

*Eldis aims to share the best in development, policy, practice and research.*

Two other IRC authors and titles feature among their first 10 internet sources on water:

- The relevance of sustainable livelihoods to water ( S. Smits / Loughborough University of Technology , 2005) The relevance of water to sustainable livelihoods is connected to problems surrounding its adequate and regulated provision by local municipalities.
- Domestic water supplies and livelihoods approaches ( P. Moriarty;J. Butterworth/ IRC International Water and Sanitation Centre , 2008) Contrary to the beliefs of many planners and engineers, large



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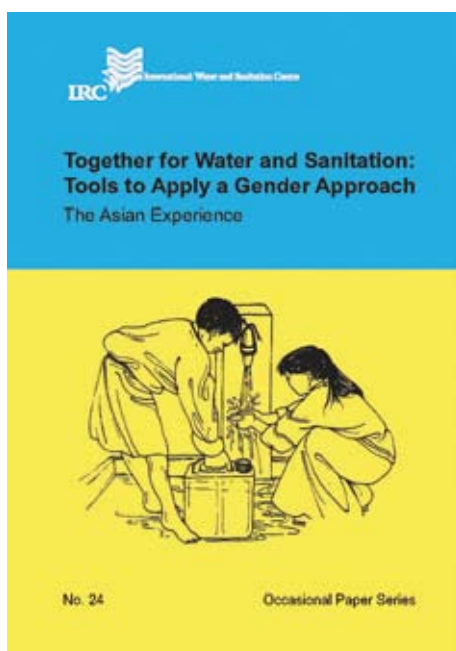
quantities of any 'domestic' water supply are used for 'non-domestic' productive purposes.

### IRC on of four key web sites

The IRC site is also mentioned as one of the four key websites on water

- IRC International Water and Sanitation Centre
- International Water Management Institute (IWMI)
- Global Water Partnership
- Water Supply and Sanitation Collaborative Council (WSSCC)

Source: Eldis e-mail, 16 Feb 2009, <http://www.eldis.org/>



The others were:

- Linking Technology Choice with Operation and Maintenance in the Context of Community Water Supply and Sanitation (2003);
- Technology Selection for Water Treatment and Pollution Control (2003);
- Community Water, Community Management: From System to Service in Rural Areas (2003);
- Small Community Water Supplies: Technology, People and Partnership (2002).

*"Existing support resources fail to adequately serve WASH practitioners"*

The authors of this analysis conducted an assessment of 120 existing support resources including books, manuals, and

websites. Additionally, they performed an in-depth evaluation of the 18 support resources that most closely resembled decision-making tools. This analysis indicated that existing support resources fail to adequately serve WASH practitioners. Most commonly missing among the resources evaluated were: an effective user interface; consideration of social implications; regional specificity; information on costs and financing; hygiene approaches; project replicability; and evaluation and monitoring.

The authors hope that this report will lead to the development of a decision-

making support tool in the WASH sector that will serve practitioners seeking the best options to meet the water, sanitation, and hygiene needs of their communities. They also seek to build a foundation to develop the ongoing support system that will be required to ensure that technologies and approaches in the WASH sector are successfully implemented and maintained on the ground.

The book can be downloaded free of charge from <http://www.wilsoncenter.org/topics/docs/ReviewofDecisionmakingSupportTools.doc.pdf>

## Resources and Events

### Events

#### Singapore International Water Week.

Singapore, 22-26 June 2009. Organised by: Singapore International Water Week Pte Ltd (a company set up by Singapore's Ministry of the Environment & Water Resources and PUB, Singapore's National Water Agency)

Theme: "Sustainable Cities - Infrastructure and Technologies for Water"

The five highlights of the Week are: Water Leaders Summit, Water Convention, Water Expo, Business Forums and Lee Kuan Yew Water Prize.

Convention themes:

- Water technology solutions for today's application;
- Managing water infrastructure;
- Water and health (developed with the World Health Organization (WHO) and United States Environmental Protection Agency (USEPA));
- Planning for sustainable water solutions.

Contact: [info@siww.com.sg](mailto:info@siww.com.sg)

**First International Conference on Advances in Wastewater Treatment and Reuse.** Tehran, Iran, 30 June - 02 July 2009. Organised by: School of Chemical Engineering, College of Engineering, University of Tehran in collaboration with European Union.

Main topics:

- industrial and municipal wastewater treatment;
- water recycling and reuse;
- sustainable management, policies and laws;
- new technologies (nanotech., biotech., green tech., phytoremediation, AOP);

- membrane & separation technologies (membrane bioreactors, adsorption);
- reactions and transport phenomena in wastewater treatment;
- process modeling and simulation;
- special pollutants (heavy metals, hazardous substances); and
- education and case studies.

Contact: School of Chemical Engineering, College of Engineering, University of Tehran, Tehran, Iran, tel.: +98-21-61112268, e-mail, [awtr@ut.ac.ir](mailto:awtr@ut.ac.ir)

#### Global Conference on Microbial Contaminants in Drinking Water.

Singapore, 5-8 October 2009. Organised by: American Water Works Association (AWWA) and Public Utilities Board (PUB) of Singapore

Topics:

- human health, risk and policy issues (e.g. infectivity and early outbreak detection; QMRA, climate change effects, potable reuse issues)
- detection technology (e.g. advances in detection; novel methods; rapid detection strategies)
- treatment and management issues (e.g. advanced drinking water treatment strategies; indicators and surrogates; membranes and pathogen removal; disinfection challenges and issues)
- tropical water quality issues (e.g. microbial source tracking; tropical waterborne pathogens)
- disaster planning & management issues (e.g. source water protection; monitoring strategies; risk communication; infrastructure protection)

Contact: [info@waterpathogens2009.com](mailto:info@waterpathogens2009.com)

### Nieuws in Brief

#### Cholera: incidence under-reported, millions infected every year says WHO

According to the World Health Organization, the incidence of cholera is being systematically under-reported by countries afraid of losing trade and income from tourism. It estimates that the disease is infecting millions of people a year, 10 times more than the number of cases reported.

Many people fail to report that they are suffering from cholera because of the stigma attached to it. 'People see it as a dirty disease, says Claire-Lise Chaignat, cholera coordinator at the World Health Organisation, in the WHO Bulletin<sup>1</sup>. 'They think it's normal to have diarrhoea.' Cholera is spread mostly through contaminated food and water

In 2007, there were 178,000 reported cases of cholera, with 4,031 deaths. Chaignat believes, however, that the actual death toll could have been as high as 120,000.

The disease is spreading fast in Zimbabwe, while Angola, Sudan, Ethiopia, Afghanistan, Liberia, South Africa and Madagascar have all had large outbreaks in the past decade. Other hotspots include Bangladesh, China, India, Indonesia, Pakistan, the Philippines, and much of Africa.

1. Cumberland, S. (2009). *An old enemy returns. Bulletin of the World Health Organization : vol. 87, no. 2*

#### Uganda, Nyadri district: schools without pit latrines will not open for first term

Education officials in Nyadri district have said schools with dilapidated pit-latrines will not open for the first term. The district inspector of schools, Flavia Droti, said six schools had so far been identified and they would only open after new latrines had been constructed. The first term started on 2 February 2009.

Droti said: "A report by inspectors of schools suggested that the state of pit latrines in most primary schools was wanting. Most of the latrines were in a dangerous condition and need to either be replaced or repaired." Droti was responding to a statement by the district council chairman, Viga Kanon, calling for the situation to be rectified so that pupils report for next term on time.

Kanon noted that Epa Primary School which has the highest enrolment, needs at least two new five-stance ventilated-improved pit (VIP) latrines for both the pupils and teachers. He said the old pit-latrines would either collapse or sink because of the torrential rains that began in August 2008.

Source: Richard Adrama, *New Vision / allAfrica.com*, 25 Jan 2009

#### Ghana: toilet wars

There was uproar at the infant Ashaiman Municipal Assembly (ASHMA) near Tema when angry National Democratic Congress (NDC) supporters descended on the facility seeking the transfer of the ownership of public toilets in the sprawling township. Frightened staff of the assembly went on an indefinite strike for fear of being manhandled.

Their action, laced with noisy singing of war songs, was a replication of what has come to be known as the NDC toilet coup. One of the features of the assumption of power by President John Evans Atta Mills on 7 January 2009 has been the seizure of public toilets across the country. The toilets, which had been handed over to contractors a few years ago are considered to be goldmines and NDC supporters think with the swing in the pendulum of power in the country, they too should partake in the pie. A day after Mills was sworn into office, a group of young men, allegedly from the camp of the NDC, took over the Mallam Tunga public toilet in the Ga West District Assembly.

Source: Razak Mardorgyz, *Ashaiman, Daily Guide*, 12 Feb 2009; Nathaniel Y. Yankson, *Daily Guide*, 10 Feb 2009

## New publications

*Multiple use water service implementation in Nepal and India.* Mikhail, M. and Yoder, R. (2008). Multiple use water service implementation in Nepal and India : experience and lessons for scale-up. Lakewood, CO, USA, International Development Enterprises. viii, 318 p.

This book explores the practical implementation of the multiple-use water services (MUS) concept in Nepal and India, focusing on community-level lessons and implications for scaling up the approach. Lessons are drawn from projects that attempted to move beyond the segregation of irrigation and domestic water systems to allow the poor to access water for domestic needs as well as enable income-generating vegetable production. The MUS work in both countries included application of the learning alliance approach, allowing idea sharing at the national/state, district, and local levels. These community, NGO and partner efforts to integrate water resource use will inspire professionals to look at village water use and service delivery in new ways.

The book is jointly published by International Development Enterprises, the Challenge Program on Water and Food and the International Water Management Institute. It is provisionally only available online, [http://www.ideorg.org/news/MUS\\_book.php](http://www.ideorg.org/news/MUS_book.php). IDE, 10403 West Colfax, Suite 500, Lakewood, CO 80215, Phone: 1-303-232-4336; e-mail: [info@ideorg.org](mailto:info@ideorg.org)

*Promoting sanitation and hygiene to rural households.* Newborne, P. and Smet, J.E.M. (2008). Promoting sanitation and hygiene to rural households : the experience of the Southern Nations, Nationalities and People's Region (SNNPR), Ethiopia. (Synthesis papers / RiPPLE). Addis Ababa, Ethiopia, RiPPLE, Research-inspired Policy and Practice Learning in Ethiopia and the Nile region. - v, 22 p. : boxes, fig., photogr. - 15 ref.

Initially brought to international attention as a success story by the Water and Sanitation Programme-WSP, the post-2003 Sanitation and Hygiene strategy of the regional government of the Southern Nations region (SNNPR) in Ethiopia has now been studied by a DFID-funded research and learning project, the 'RiPPLE' Programme, to look at how success was achieved – and how far. Latrine construction and use, hand-washing and water storage/handling by households were surveyed, by quantitative and qualitative methods, in six localities (kebele)

in two districts (woreda). The project also studied the policy-making process.

Download from: <http://www.rippleethiopia.org/documents/info/20080807-synthesis-sanitation-hygiene>. RiPPLE Office ,P.O.Box 4812, Addis Ababa; Ethiopia, e-mail [info@rippleethiopia.org](mailto:info@rippleethiopia.org)

*Marketing safe water systems : why it is so hard to get safe water to the poor – and so profitable to sell it to the rich.* Heierli, U. (2008). Marketing safe water systems : why it is so hard to get safe water to the poor – and so profitable to sell it to the rich . Bern, Switzerland, Swiss Agency for Development and Cooperation (SDC). -114 p. : fig., tab. - Includes references.



This publication presents some of the cheap or even free solutions that provide safe water to the poor. It is now scientifically proven that household water treatment solutions can indeed eliminate bacterial contamination effectively. Using filters, chlorination or solar water disinfection (SODIS) is effective and reduces diarrhoea and child mortality significantly. The technical, social and financial aspects of such systems are all examined. In addressing the main marketing challenges,

the 5 Ps of marketing: Product, Price, Place, Promotion and People are discussed. The book puts forward a mix of marketing and social marketing strategies which can raise the dissemination of household water treatment systems to the level required for achieving the Millennium Development Goals. It provides unique insights, from the varied perspectives of users, disseminators, producers and retailers, into the marketing challenges of point-of-use water treatment devices. The book features many photos to illustrate its key findings. They are the fruit of extensive field visits by the author, as are many film clips which can also be downloaded.

Download from <http://www.poverty.ch/safe-water.html>

*Key topics in public water utility reform.* Ginneken, M. van and Kingdom, B. (2008). Key topics in public water utility reform. (Water working notes; no. 17). Washington, DC, USA, World Bank. - viii, 53 p. : 28 boxes, 5 fig., 1 tab. - Bibliography: p. 51-53

Urban water supply services have traditionally been provided by state-owned water utilities. In the past decades, many governments have tried to turn state-owned water utilities into effective and viable organizations, with mixed success. This report presents a framework of attributes of well-functioning utilities and how they have introduced key institutional changes. Why have some public utilities become more efficient service providers, while others have not been able to break the vicious cycle of low performance and low cost recovery? The report aims to help water and sanitation sector practitioners choose and apply public utility reform approaches.

Download from <http://go.worldbank.org/5824JJJOGO>

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